

AMERICAN CYANAMID COMPANY

1937 WEST MAIN STREET

STAMFORD, CONN.



TELEPHONE
STAMFORD 4-6141

August 20, 1946

Mr. Joshua Lederberg
Yale University
Osborn Botanical Laboratory
New Haven, Connecticut

Dear Lederberg:

We are sending under separate cover cultures of two lysineless mutant strains of *E. coli*, 66-489 and 15L-171, and a methionine requiring culture (18-15L-171) derived from the latter as described in my letter of August 1. The culture of 66-489 was taken from a stock culture of the original single colony isolate while 15L-171 has been carried through five, serial, single colony isolations from A.C.-agar. The culture of 18-15L-171 was taken after the second transfer in the basal medium plus methionine from a single colony culture of colony #18 isolated from a plate of 15L-171 in basal-agar supplemented with methionine and thiamine.

heavy inoculum? We have attempted to make differential plate counts with a single colony culture of 15L-171 on supplemented basal-agar but the colonies vary considerably in size. Approximately as many colonies grow in the basal agar (at 48-72 hours) as in the basal agar plus methionine or thiamine, although the majority of such colonies fail to grow at a normal rate when inoculated into the basal medium and appear to be similar to 18-15L-171. Most of the subsurface colonies have a rough appearance due to numerous satellite colonies. We have not studied strain 66-489 in a similar manner but have noted that it gave light growth in the basal medium plus a combination of thirty-six growth factors without lysine and without reversion. We have not tested the two strains for syntrophism but hope to do so shortly.

lysine
↓
(lysine) + meth.

We have not studied strain 18-15L-171 in great detail but it appears capable of growth also with homocystine, cystine plus lysine, and delayed growth with thiamine which is accompanied by the ability to grow normally with lysine. Cystine inhibits the growth on methionine.

thiamine??

We do not intend to carry these studies further and shall probably only state in one of our papers that such

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spontaneous changes in growth requirements have been observed. If you are interested in more detailed information on these or similar strains you might stop in sometime on your way through Stamford. You may be interested in using some of the other mutant strains also for genetic studies. Several others show some relation between methionine and lysine, including a strain with a partial block which grows with either pantothenate or methionine plus lysine.

We shall be interested in hearing of the results of your genetic studies. They are likely to have some bearing on the use of the mutant strains in studies of bacterial metabolism.

With best regards,

Sincerely,

AMERICAN CYANAMID COMPANY

Ray.

Raymond R. Roepke

RRR:ab